I claim:

1. A channel estimator having an input and an output, the channel estimator comprising:

a plurality of distinct filters selectably coupled to the input and the output wherein each one of the plurality of filters has a different set of pre-calculated filter coefficients; and

a switching circuit that selects one of the plurality of distinct filters based on an error signal.

2. The channel estimator of claim 1 wherein the plurality of filters comprises N filters where N is an integer equal to 2 or greater and each one of the N filters has a different order.

3. The channel estimator of claim 1 wherein the plurality of filters comprises N filters where N is an integer equal to 2 or greater and each one of the N filters is a non-recursive filter.

4. The channel estimator of claim 1 where the pre-calculated filter coefficients are calculated using Lagrangian interpolation.

5. The channel estimator of claim 1 where the pre-calculated filter coefficients are calculated using interpolation other than Lagrangian.

6. The channel estimator of claim 1 wherein each one of the plurality of filters has an input path and an output path whereby the input path of a selected filter is coupled to the input and the output path of the selected filter is coupled to the output.

7. The channel estimator of claim 1 wherein the error signal is received from a

decoder coupled to a communication channel whose response is being estimated by the channel estimator.

8. A method for estimating a response of a communication channel, the method comprises the steps of:

providing a plurality of distinct selectable filters each of which has an order and a different set of pre-calculated coefficients; and

selecting one of the plurality of distinct filters based on an error signal resulting from a decoding operation on a signal from the communication channel.

9. The method of claim 8 further comprising the steps of:

receiving reference signals which have propagated through the communication channel; and

applying the received reference signals to the selected filter.

10. The method of claim 9 wherein the step of applying the received reference signal to the selected filter comprises determining a quantity of received reference signals to be applied thus determining the order of the selected filter.

11. The method of claim 8 where the step of selecting one of the plurality of distinct filters comprises the steps of :

establishing a value for the received error signal;

establishing a threshold value that is a function of the error signal; and

selecting the one filter based on the value of the received error signal relative to the value of the established threshold.